DOCUMENT RESUME

ED 203 092 CE 029 151

AUTHOR Long, Diana
TITLE Gardener and Landscape Worker. Teacher's Guide. Competency Based Education Curriculum.
INSTITUTION Radio Corp. of America, Dallas, Tex. Education Services.
SPONS AGENCY West Virginia State Dept. of Education, Charleston. Bureau of Vocational, Technical, and Adult Education.; West Virginia State Vocational Curriculum Lab., Cedar Lakes.
PUB DATE Dec 79
NOTE 68p.; For related documents see CE 029 150-153.
AVAILABLE FROM Vocational Curriculum Laboratory, Cedar Lakes Conference Center, Ripley, WV 25271.

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS *Agricultural Education; Behavioral Objectives; Competency Based Education; Entomology; *Grounds Keepers; *Job Skills; *Landscaping; Occupational Information; *Ornamental Horticulture; Ornamental Horticulture Occupations; Plant Propagation; Student Evaluation; Teaching Guides; Turf Management; *Vocational Education

ABSTRACT

This instructor's guide accompanies the secondary-level, competency-based student materials for Gardener and Landscape Worker available separately--see note. It is intended for use as a reference and aid in implementing the curriculum in a vocational agriculture program. These sections are included: identification and validation of job titles and competencies, listing of modules and competencies included in the curriculum, bibliography of resources, and equipment list. An implementation guide summarizes each competency sheet (found in the student materials) as to equipment needed, instructor's responsibilities, and a summary and/or answers to the criterion evaluation. Sample grade cards are provided. (YLB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED203092

Teacher's Guide

GARDENER AND LANDSCAPE WORKER

Competency Based Education Curriculum

Prepared by:
Diana Long
RCA Education Service

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

R. Thomas

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Produced at:
The West Virginia
Vocational Curriculum Laboratory

by

Fred W. Harrington
Curriculum Coordinator

Stanley E. Hopkins
Curriculum Specialist

Thomas P. Thurman
Production Manager

Macel R. Osborne
Secretary

CE 029 151

This material was developed by RCA Education Service through the cooperation and support of the Bureau of Vocational, Technical and Adult Education, West Virginia Department of Education, Charleston, West Virginia.

December 1979

WEST VIRGINIA BOARD OF EDUCATION

EXECUTIVE OFFICES

Charleston, West Virginia 25305

Mrs. Mary Martha Merritt, President
Beckley, 1983

Mr. William M. Smith, Vice President
Follansbee, 1982

Mr. James P. Clark, Secretary
St. Albans, 1986

Mr. Duke A. McDaniel, Member
Petersburg, 1987

Mr. Paul J. Morris, Member
Dunbar, 1980

Mr. Bob E. Myers, Member
Huntington, 1985

Dr. Carl J. Roncaglione, Member
Charleston, 1981

Mr. Richard N. Schnacke, Member
New Martinsville, 1988

Dr. Charles H. Wagoner, Member
Weston, 1984

EX OFFICIO MEMBER
Dr. Roy Truby
Superintendent
West Virginia Department of Education

EX OFFICIO MEMBER
Dr. Ben L. Morton
Chancellor
West Virginia Board of Regents

VOCATIONAL EDUCATION PROGRAMS ARE AVAILABLE WITHOUT REGARD TO RACE, COLOR, NATIONAL ORIGIN, SEX OR HANDICAP.

PREFACE

It is with great pleasure that we bring you another West Virginia competency based education (CBE) curriculum. This Gardener and Landscape Worker curriculum was developed for West Virginia under contract, by RCA Education Service. The effort was coordinated by staff of the Bureau of Vocational, Technical and Adult Education.

The Bureau began advocating competency based education in 1974. Since that time West Virginia has produced over 25 CBE curricula in various occupational areas. We also have a number of CBE curricula currently in the process of being developed and/or fieldtested.

This Gardener and Landscape Worker curriculum was inserviced and disseminated to West Virginia vocational agricultural teachers at regional meetings during the spring of 1980. Additional copies of this curriculum are available from the:

Vocational Curriculum Laboratory
Cedar Lakes Conference Center
Ripley, West Virginia 25271
Telephone: 1-800-642-2670

I trust this material will be of assistance in your program. Any suggestions you may have for improving this curriculum may be sent to our State Curriculum Lab. Through this feedback we plan to continually update and revise our materials.

VOCATIONAL, TECHNICAL AND ADULT EDUCATION

Clarence E. Burdette

Clarence E. Burdette
Assistant State Superintendent of Schools

ACKNOWLEDGEMENTS

The following businesses and individuals were very helpful in the development of this CBE curriculum.

Businesses

Culloden Nursery and Landscaping, Culloden, WV

Shady Side Landscaping, St. Albans, WV

Price Bros. and Sons, Inc., Beckley, WV

Stadler Greenhouses, Nitro, WV

Price Landscaping Service and Garden Center, Charleston, WV

Conners Greenhouses, Charleston, WV

Ohio Valley Tuff Farms, Inc., Parkersburg, WV

Individuals

Ronald King, Barboursville High School

Leroy Mosley, Carver Career Center

James Doughtery, James Rumsey Voc-Tech Center

Robert Beard, Parkersburg South High School

Lloyd Earnest, Cameron High School

Paul Lovett, Taylor County Voc-Tech Center

John Aylor, Wardensville, WV

Mike Yokum, Circleville High School

Virgil Wilkins, Hundred High School

Harold Skidmore II, Calhoun County High School

Purpose of the

GARDENER AND LANDSCAPE WORKER

Competency Based Education Curriculum

This competency based education (CBE) curriculum, with Teacher's Guide, has been developed so that you may adapt any or all of its contents to accommodate your teaching style.

The purpose of this CBE curriculum is to provide you and your advisory committee with a set of West Virginia-validated gardening and landscaping Tasks, along with (1) the Steps needed to perform each task, (2) the Evaluation Standards, and (3) suggested Learning Activities.

Depending on your teaching style, you may want to use this material primarily to assist you in your own teaching plans, or the material has been developed in enough detail so that it may, with proper supervision, be used by your students.

How you use this CBE curriculum is up to you. It has been based on the best horticultural information and material available in 1978-79 in West Virginia and the United States.

TABLE OF CONTENTS

Preface II

Acknowledgements III

Purpose of Curriculum IV

I. Introduction 1

II. Identification and Validation of Job Titles and Competencies 2

III. Functions of Developmental Committee 3

IV. Program Organization 4

V. Bibliography of Resources 8

VI. Equipment List 11

VII. Implementation of Curriculum 13

Grade Cards 58

INSTRUCTOR'S GUIDE - GARDENER AND LANDSCAPE WORKER

I. Introduction

The Bureau of Vocational, Technical and Adult Education, West Virginia Department of Education, supports the concept of competency based education because it is based upon occupational relevancy and can account for skills required by an individual to perform on the job. CBE is based on mastery learning principles and requires demonstration of skill and thus can ensure that critical skills required of the entry-level worker are included and attained in training. CBE allows for individual progress, and thus can provide employable skills for some students after short periods of training and can also lead to preparation for advanced jobs.

This instructor's guide is to be used as a reference for instructors and an aid in implementing the curriculum in their program. The following sections are included in the guide:

Preface
Acknowledgements
Purpose of Curriculum
I. Introduction
II. Identification and Validation of Job Titles and Competencies
III. Functions of the Developmental Committee
IV. Program Organization
V. Bibliography of Resources
VI. Equipment List
VII. Implementation of Curriculum

Grade Cards

II. Identification and Validation of Job Titles and Competencies

The competencies for this program are based upon three V-TECS catalogs: Gardening, Turf Management and Nursery Production. After a review of the DOT, the following job titles were noted as complying with the competencies selected for curriculum development.

Landscape Gardener	405.687 - 014
Groundskeeper, Parks and Grounds	406.687 - 010
Gardener	406.684 - 014
Greenskeeper	406.137 - 010

The tasks listed in each catalog were reviewed, cross referenced and validated through a mail survey to agribusiness instructors under the Bureau of Vocational, Technical and Adult Education and on site interviews of 15 workers; five supervisors from five different employment locations. The surveys were tabulated and any tasks that were performed by less than 40% of the workers were dropped.

III. Functions of the Developmental Committee

The developmental committee was established to guide the development of the curriculum. The Committee consisted of Dr. Fred Harrington, State Curriculum Supervisor; Don Michael, State Agriculture Supervisor and Bill West, Program Specialist, Agriculture.

The Committee met on several occasions for the following purposes:

1. Establish curriculum format and clarify project objectives.
2. Review major job titles and competencies.
3. Review survey results.
4. Finalize competency list.
5. Review student materials.

IV. Program Organization: Gardener and Landscape Worker

The following is a listing of the modules and competencies included in the curriculum.

MODULE 01	Occupational Knowledge
COMPETENCY STATEMENT 01	Describe duties common to gardeners and landscape workers.
COMPETENCY STATEMENT 02	Describe working conditions of gardeners and landscape workers.
COMPETENCY STATEMENT 03	Describe educational and technical requirements for landscape worders and gardeners.
COMPETENCY STATEMENT 04	Describe the economic outlook for gardeners and landscape workers for the next ten years.
MODULE 02	Preparing Lawn Seedbed
COMPETENCY STATEMENT 01	Take soil samples and interpret soil test analysis.
COMPETENCY STATEMENT 02	Prepare a seedbed for lawn areas using tiller and tractor.
COMPETENCY STATEMENT 03	Prepare and apply compost.
MODULE 03	Sowing Grass Seed
COMPETENCY STATEMENT 01	Select and mix grass seed for establishing a lawn.
COMPETENCY STATEMENT 02	Sow grass seed with hand seeder.
COMPETENCY STATEMENT 03	Sow grass seed with gravity and/or cyclone seeders.
COMPETENCY STATEMENT 04	Finish seedbed after seeding, including raking, rolling, watering and mulching.
MODULE 04	Lawn Care
COMPETENCY STATEMENT 01	Care for lawn until first cutting, including watering and application of fertilizer.

MODULE 04	Lawn Care
COMPETENCY STATEMENT 02	Mow grass with reel type mower and rotary mower.
COMPETENCY STATEMENT 03	Select and apply fertilizer to established lawn areas.
MODULE 05	Disease and Insects: Lawns
COMPETENCY STATEMENT 01	Identify diseased grass.
COMPETENCY STATEMENT 02	Identify grass damaged by insects and other animal pests.
COMPETENCY STATEMENT 03	Mix insecticide, herbicide, and fungicide.
COMPETENCY STATEMENT 04	Control disease, weeds, and insect damage on established lawns by applying insecitcides, herbicides, and fungicides.
MODULE 06	Lawn Repair
COMPETENCY STATEMENT 01	Renovate worn spots in lawns by filling holes and depressions.
COMPETENCY STATEMENT 02	Aerate sod.
COMPETENCY STATEMENT 03	Remove and replace damaged turf.
COMPETENCY STATEMENT 04	Repair sod by sprigging and plugging.
MODULE 07	Planting Trees and Shrubs
COMPETENCY STATEMENT 01	Plant trees and shrubs.
COMPETENCY STATEMENT 02	Form ball and burlap shrubs and trees.
COMPETENCY STATEMENT 03	Transplant trees and shrubs.
COMPETENCY STATEMENT 04	Brace newly planted trees.
MODULE 08	Pruning
COMPETENCY STATEMENT 01	Trim and prune trees for balance, decorative and vegetative purposes.

MODULE 08	Pruning
COMPETENCY STATEMENT 02	Prune shrubs for balance, decorative and vegetative purposes.
COMPETENCY STATEMENT 03	Prune hedge for balance, decorative and vegetative purposes.
COMPETENCY STATEMENT 04	Train shrubs and hedges for special purposes including espalier effect, topiary effect and bonsai effect.
MODULE 09	Tree and Shrub Care
COMPETENCY STATEMENT 01	Treat tree wounds.
COMPETENCY STATEMENT 02	Inject preservatives and fillers.
COMPETENCY STATEMENT 03	Select and apply fertilizer to trees and shrubs.
COMPETENCY STATEMENT 04	Applying insecticides and other chemicals by power sprayer to trees and shrubs.
COMPETENCY STATEMENT 05	Prepare and protect trees and shrubs from weather.
MODULE 10	Planting and Care of Flowers
COMPETENCY STATEMENT 01	Plant and transplant annual and perennial flowers.
COMPETENCY STATEMENT 02	Select and apply fertilizer to annual and perennial flowers.
MODULE 11	Flower Care
COMPETENCY STATEMENT 01	Control weeds in flower beds by cultivating and hand weeding.
COMPETENCY STATEMENT 02	Apply insecticides and other chemicals by hand sprayer and duster to annual and perennial flowers.

MODULE 12	Tool Maintenance
COMPETENCY STATEMENT 01	Maintain hand tools used in gardening and landscaping.
COMPETENCY STATEMENT 02	Perform operators' services and maintenance on tractor and rotary tiller.
COMPETENCY STATEMENT 03	Clean and adjust hand and power sprayers, dusters, and seeders.
COMPETENCY STATEMENT 04	Set up, operate, and shut down portable watering and/or irrigation system, including extension of system.

V. Bibliography of Resources

The curriculum is based upon the following textbooks and materials. Loan copies of the textbooks, audio visuals and purchasing information are available from the Curriculum Laboratory at Cedar Lakes.

Laurie, Alex, The Greenhouse Worker: Ohio Agricultural Education Curriculum Materials Service; Columbus, Ohio 1979.

Urbanic, Charles E., The Nursery Worker Part I - Basic Plant and Soil Science; Ohio Agricultural Education Curriculum Materials Service; Columbus, Ohio; 1970.

Urbanic, Charles E., The Nursery Worker Part II - Nursery Practices; Ohio Agricultural Education Curriculum Materials Service; Columbus, Ohio; 1970.

Colvin, Thomas Grounds Keeping Equipment Volume I; American Association for Vocational Instructional Materials; Athens, Georgia 1974.

Hughes, Denise A. and Rice, Laura Williams, Growing Container Plants: A Guide to Production in the High School Greenhouse; Vocational Education Productions San Luis Obispo, California; 1977.

Williams, Robert D. and Hanks, Sidney H., Hardwood Nurseryman's Guide; U. S. Department of Agriculture; Forest Survey, 1976.

Nelson, Kennard S., Flower and Plant Production in the Greenhouse; The Interstate Printers and Publishers, Inc.; Danville, Illinois 1966.

Moore, Stanley B; Ornamental Horticulture as a Vocation; Mor-Mac Publishing Company, Inc., Fairborn, Ohio 1969.

Reiley, H. Edward and Shry, Carroll L. Jr.; Introductory Horticulture; Delmar Publishers Albany, New York 1979.

Bishop, Douglas; Chapman, Stephen and Carter, Lark, Working in Plant Science; Gregg Division McGraw-Hill Book Company 1978.

Bishop, Douglas; Chapman, Stephen and Carter, Lark, Working in Plant Science Activity Guide; Gregg Division McGraw-Hill Book Company 1978.

Kelly, McGhee and Lawrence, Ornamental Horticulture; College of Agriculture and Forestry Division of Resource Management, West Virginia University; Morgantown, West Virginia 1973.

"Harvesting and Planting Trees and Shrubs"

"Plant Propagation: Sexual"
"Lawn Maintenance"
"Lawn Establishment"
"Pruning"
"Plant Propagation: Asexual"

Holyohe, Vaughn, "Turfgrass Pest Control" Prepared for the purpose of Pesticide Certification; West Virginia Department of Agriculture, Charleston, WV.

U. S. Department of Agriculture, Lawn Diseases and How to Control Them Home Garden Bulletin No. 61, Superintendents of Documents, U. S. Government Printing Office, Washington, D. C. October 1977.

Cooperative Extension Service, Pest Information Service; West Virginia University, Morgantown, West Virginia 1977.

"Leaf Spot Helminthosporium"
"Dollar Spot"
"Slime Molds on Grass"
"Tips to Help Avoid Lawn Problems"
"Lawn Grass Brown Patch"
"Fading-Out of Lawns"

Cooperative Extension Service Landscape Facts, Ohio State University, Columbus, Ohio 1975.

"Thatch Removal in Lawns"
"Flag and Stripe Smut on Turf"
"Helminthosporium Leaf Spots"
"Combination Fertilizer and Pesticides
Use and Misuse in Lawns"

AUDIO - VISUALS

Filmstrip and Cassettes

Vocational Education Productions, California State Polytechnic College, San Luis Obispo, California.

"Techniques in Land Preparation"
Part 1 Seedbed Preparation
Part II Bed Maintenance
"Plant Identification Annuals, Perennials and House Plants"
"Fertilizing Ornamental Plants"

"Propagating Ornamental Plants"
"Growing Media for Ornamental Plants"
"The Elements of Pruning"
"Controlling Pests of Ornamental Plants"
"Lawns and Ground Covers"

American Association for Vocational Instructional Materials, Applying Pesticides: Management Application Safety, Athens Georgia 1976.

"Recognizing Pests and Pesticides"
"Selecting Pesticides"
"Handling Pesticides Safely"
"Type and Size of Sprayer to Use"
"Operating Sprayers"
"Applying Pesticides"

VI. Equipment List

Gardener and Landscape Worker

Hoses, Water and Fertilizer
Hammer, Claw
Wheelbarrows
Hoes, Nursery
Rakes, Garden
Screwdrivers
Shovels, Long Handle, Round Point
Buckets
Cloves, Working
Pliers
Wrenches, Pipe
Pots
Saw, Hand
Wrenches, Various Sizes
Flats
Heaters
Flower Cans
Wrench, Adjustable
Snips, Pruning
Axe
Digger, Post Hole
Rototiller
Rakes, Lawn
Cords, Electrical
Shears, Pruning, Short Handle
Hedge Clipper
Knives, Cutting
Shears, Pruning, Long Handle
Brooms
Rules, Steel Tape
Shovels, Square Point
Tables, Work
Sprayers, Manual
Thermometers
Rules, Folding
Seeder
Hammer, Sledge
Irrigation System, Sprinkler with Booster Pump
Socket Set
Spades, Nursery
Fans
Fork
Spoons, Measuring
Soil Mixing Container
Soil Sterilizer
Clamps, C
Stapler and Staples
Cups, Measuring
Power Rotary Mower
Sprayer, Power
Scales
Thermostats
Gloves, Rubber
Pipe Cutter
Tractor
Drill, Electric, Hand
Hatchet
Square, Carpenters
Level, Carpenters
Dusters
Pipe Threader
Plow
Snips, Tin
Sharpener
Pick
Shovels, Short Handle, Round Point
Trailer
Bar, Crow and Tamping Combination
Sprinkling Can
Spreader, Fertilizer, Lime
Bits, Various Sizes
Chain Saw
Nursery Cart
Saw, Pruning
Shears, Grass
Cultivator
Hedge Clipper, Electrical
Compost Grinder
Scissors, Wire
Blade, Scraper
Injectors, Fertilizer
Knives, Budding
Misting System
Disk Harrow
Respirator
Fumigator, Pressure
Refrigerator
Trowels
Saw, Power Table
Brace, Ratchet Bit
Chalk Line

Knives, Putty
Chisels, Cabinet, Wood
Jointer, Hand Saw
Plant Labeler
Edgers, Hand
Bush Hook
Mattock
Multiple Can Punch
Arc Welder
Shear Can
Clocks, Time
Saw, Pruning, Long Handle
Bulb Planters, Hand Type
Power Greens Mower
Heating Cables
Tree Trimmer
Planes, Block
Soil Testing Kit
Mallet, Wooden
Blade, Dozer
Cultivator, Long Handle, Garden Plow
Glass Cutter
Saw, Coping
Cart, Dump Bed
Grass Hook
Knives, Draw
Glazing Hammer or Tool
Plant Syringes

Bevel, Sliding T
Edgers, Power
Power Reel Mower
Gas Welder
Sod Cutter
Humidifiers
Transit, Surveyor's
Dividers, Wing
Humidity Indicators
Planes, Jack
Roller, Water Ballast
Scarifier
Adding Machine
Lattern, Wax Melter
Root Feeders, Pipe Type
Calculator
Straight Hoe
Typewriter
Land Level-Plane
Sod Sprigging Machine
Grease Gun
U Blade Diggers
Can Puncher
Tree Spade
Jacks
Power Pruner
Potting Machine

VII. Implementation of Curriculum

The following guide was developed to aid in conducting the program. Each competency sheet is summarized as to equipment needed, instructor's responsibilities, and a summary and/or answers to the Criterion Evaluation. The guide does not include regular instructor activities such as supervising students practice, or checking students practice.

MODULE 01 — Occupational Knowledge

COMPETENCY STATEMENT 01 — Describe duties common to gardeners and landscape workers.

EQUIPMENT NEEDED — None

TEXTBOOK — Dictionary of Occupational Titles

INSTRUCTOR'S RESPONSIBILITIES

None

SUMMARY OF EVALUATION

Written test. Students must be 100% accurate. They may not use references. Answers follow.

MODULE 01 — Occupational Knowledge

COMPETENCY STATEMENT 02 — Describe working conditions of gardeners and landscape workers.

EQUIPMENT NEEDED — None

TEXTBOOK — None

INSTRUCTOR'S RESPONSIBILITIES

None

SUMMARY OF EVALUATION

Report - written or oral. If the report is written it must be neat and free from spelling errors. References may be used.

MODULE 01 — Occupational Knowledge

COMPETENCY STATEMENT 03 — Describe educational and technical requirements for landscape workers and gardeners.

EQUIPMENT NEEDED — None

TEXTBOOK — None

INSTRUCTOR'S RESPONSIBILITIES

None

SUMMARY OF EVALUATION

Written report. The plan must be feasible and must be written neatly and correctly.

MODULE 01 — Occupational Knowledge

COMPETENCY STATEMENT 04 — Describe the economic outlook for gardeners and landscape workers for the next ten years.

EQUIPMENT NEEDED — None

TEXTBOOK — Projections to 1985

INSTRUCTOR'S RESPONSIBILITIES

None

SUMMARY OF EVALUATION

Report - oral or written. If the report is written, it must be neat and free from spelling errors. References may be used.

MODULE 02 — Preparing Lawn Seedbed

COMPETENCY STATEMENT 01 — Take soil samples and interpret soil test analysis.

EQUIPMENT NEEDED — Soil samples (sandy, clay, loam)
Spade
Sample containers

TEXTBOOK — Working in Plant Science
Introductory Horticulture

INSTRUCTOR'S RESPONSIBILITIES

1. Arrange guest lecture by County Extension Agent for Learning Activities 1 and 6.
2. Lecture for Learning Activities 5 and 7.
3. Prepare quiz for Learning Activity 5.
4. Arrange for area where samples may be taken for Learning Activity 7 and Evaluation.

SUMMARY OF EVALUATION

Students must take 15 soil samples and interpret the analysis given.

MODULE 02 — Preparing Lawn Seedbed

COMPETENCY STATEMENT 02 — Prepare a seedbed for lawn areas using tiller and tractor.

EQUIPMENT NEEDED

Filmstrip projector
Tractor
Plow
Disk
Soil sample
Plant food
Rake
Soil analysis
Area suitable for seedbed

TEXTBOOK

Filmstrip: "Techniques in Land Preparation: Part One: Seedbed Preparation", Vocational Education Productions.

INSTRUCTOR'S RESPONSIBILITIES

Lecture for Learning Activities 2, 3, and 5.

SUMMARY OF EVALUATION

Preparing and feeding a seedbed. The seedbed must have a tillage depth of 5" - 7" and must have a smooth surface.

MODULE 02 — Preparing Lawn Seedbeds

COMPETENCY STATEMENT 03 — Prepare and apply compost.

EQUIPMENT NEEDED

1. A bin of compost.
2. Materials for mixing compost
3. Spade
4. Tiller
5. Area suitable for applying compost.

TEXTBOOK — Working in Plant Sciences

INSTRUCTOR'S RESPONSIBILITIES

1. Lecture/demonstration for Learning Activities 2 and 4.
2. Prepare quizzes for Learning Activities 2 and 4.

SUMMARY OF EVALUATION

Spreading and tilling compost. The compost must be spread evenly and mixed well into the soil. Preparing compost. Alternate layers of organic materials should exist and the top layer should exist and the top layer should be level.

MODULE 03 — Sowing Grass Seed

COMPETENCY STATEMENT 01 — Select and mix grass seed for establishing a lawn.

EQUIPMENT NEEDED

1. Grass seed (Smooth Brome, Orchard Grass, Timothy, Fescue, Kentucky Blue Grass)
2. Flats and soil for growing grass.

TEXTBOOK — Working in Plant Science
Introductory Horticulture

INSTRUCTOR'S RESPONSIBILITIES

1. Prepare a quiz for Learning Activity 2.
2. Lecture and prepare a quiz for Learning Activitiy 3.

SUMMARY OF EVALUATION

Identification of grasses. Students must achieve 100% accuracy, without using references. Answers follow.

MODULE 03 — Sowing Grass Seed

COMPETENCY STATEMENT 02 — Sow grass seed with hand seeder.

EQUIPMENT NEEDED

1. Grass seed
2. Sand
3. Hand seeder
4. Prepared seedbed

TEXTBOOK — None

INSTRUCTOR'S RESPONSIBILITIES

Lecture for Learning Activity 1.

SUMMARY OF EVALUATION

Hand sowing grass seed. Students must receive a satisfactory rating on all items of the student checklist without using references.

MODULE 03 — Sowing Grass Seed

COMPETENCY STATEMENT 03 — Sow grass seed with gravity and/or cyclone seeders.

EQUIPMENT NEEDED

1. Gravity seeder
2. Cyclone seeder
3. Grass seed
4. Area to be seeded

TEXTBOOK — None

INSTRUCTOR'S RESPONSIBILITIES

Lecture/demonstration for Learning Activities 1 and 2.

SUMMARY OF EVALUATION

Seeding area with cyclone and/or gravity seeder. The seeder must be set correctly, The seed must be planted evenly and tools and equipment must be cleaned and returned to storage area.

MODULE 03 — Sowing Grass Seed

COMPETENCY STATEMENT 04 — Finish seedbed after seeding, including raking, rolling, watering and mulching.

EQUIPMENT NEEDED

Seeded seedbeds
Rake
Mulch
Areas to be mulched
(level, terraced, sloping)
Roller
Watering equipment

TEXTBOOK — Introductory Horticulture

INSTRUCTOR'S RESPONSIBILITIES

1. Lecture/demonstration for Learning Activity 4.
2. Prepare a quiz for Learning Activity 4.

SUMMARY OF EVALUATION

Finish seedbed without using references.

MODULE 04 — Lawn Care

COMPETENCY STATEMENT 01 — Care for lawn until first cutting, including watering and application of fertilizer.

EQUIPMENT NEEDED

1. Plots of ground
2. Fertilizer
3. Lime
4. Watering equipment

TEXTBOOK — None

INSTRUCTOR'S RESPONSIBILITIES

1. Lecture for Learning Activity 1
2. Prepare quiz for Learning Activity 1
3. Arrange lecture by County Extension Agent for Learning Activity 2.
4. Prepare quiz for Learning Activity 2.
5. Lecture/demonstration for Learning Activity 5.

SUMMARY OF EVALUATION

1. Caring for seedbed. The lawn must grow without burning or over/under watering.
2. Written report.

MODULE 04 — Lawn Care

COMPETENCY STATEMENT 02 — Mow grass with reel type mower and rotary mower.

EQUIPMENT NEEDED

1. Reel type mower
2. Rotary mower
3. Tools/equipment needed for adjustment/maintenance

TEXTBOOK — Introductory Horticulture

INSTRUCTOR'S RESPONSIBILITIES

1. Prepare quiz for Learning Activity 1.
2. Lecture for Learning Activity 2.
3. Lecture/demonstration for Learning Activity 3.
4. Lecture/demonstration for Learning Activity 4.

SUMMARY OF EVALUATION

Mowing with reel and rotary mower. Student must receive a satisfactory rating on each item of the Student Checklist.

MODULE 04 — Lawn Care

COMPETENCY STATEMENT 03 — Select and apply fertilizer to established lawn areas.

EQUIPMENT NEEDED

1. Area that needs fertilized
2. Soil analysis
3. Cyclone spreader
4. Wheel (push type) spreader
5. Sprayer
6. Fertilizer
7. Oil

TEXTBOOK — None

INSTRUCTOR'S RESPONSIBILITIES

1. Lecture/demonstration for Learning Activity 1
2. Lecture/demonstration for Learning Activity 2
3. Lecture/demonstration for Learning Activity 3.

SUMMARY OF EVALUATION

Applying fertilizer.

MODULE 05 — Disease and Insects: Lawns

COMPETENCY STATEMENT 01 — Identify diseased grass.

EQUIPMENT NEEDED — None

TEXTBOOK

Working in Plant Science
Introductory Horticulture
Landscape Facts: Thatch Removal in Lawns
Landscape Facts: Helminthosporium Leaf Spots
Landscape Facts: Flag and Stripe Smut on Turf
Lawn Diseases

INSTRUCTOR'S RESPONSIBILITIES

1. Lectures for Learning Activities 1, 2, 4.
2. Prepare quizzes for Learning Activities 3, 5, 11.

SUMMARY OF EVALUATION

Written test. Answers follow. Students must achieve 80% accuracy without using references.

MODULE 05 — Disease and Insects: Lawns

COMPETENCY STATEMENT 02 — Identify grass damaged by insects and other animal pests.

EQUIPMENT NEEDED — Filmstrip: "Applying Pesticides: Recognizing Pests and Pesticides", American Association for Vocational Instructional Materials
Working in Plant Science

INSTRUCTOR'S RESPONSIBILITIES

1. Prepare a quiz for Learning Activity 1.
2. Arrange for a lecture by a County Extension Agent for Learning Activity 4.
3. Prepare a quiz for Learning Activity 4.
4. Locate insect/pest damaged lawns for Learning Activity 7.

SUMMARY OF EVALUATION

Written test. Students must achieve at least 90% accuracy without using references. Answers follow.

MODULE 05	Disease and Insects: Lawns
COMPETENCY STATEMENT 03	Mix insecticide, herbicide, and fungicide.
EQUIPMENT NEEDED	Filmstrip projector Pesticides Sprayers
TEXTBOOK	Filmstrip: "Selecting Pesticides, American Association for Vocational Instructional Materials Applying Pesticides: Management Application Safety Applying Pesticides: Student Workbook Filmstrip: "Handling Pesticides Safely", AAVIM

INSTRUCTOR'S RESPONSIBILITIES

1. Arrange for lecture by representative of the Environmental Protection Agency for Learning Activity 2.
2. Prepare a quiz for Learning Activity 4.

SUMMARY OF EVALUATION

Mixing pesticides.

MODULE 05 — Disease and Insects: Lawns

COMPETENCY STATEMENT 04 — Control disease, weeds, and insect damage on established lawns by applying insecticides, herbicides, and fungicides.

EQUIPMENT NEEDED
Filmstrip projector
Sprayers
Lubricant for sprayers
Insecticide, herbicide, fungicide

TEXTBOOK
Filmstrips: "Type and Size of Sprayer to Use": and "Applying Pesticides: Operating Sprayers", AAVIM
Lawn Diseases

INSTRUCTOR'S RESPONSIBILITIES

1. Lecture/demonstration for Learning Activity 2.
2. Lecture/demonstration for Learning Activity 4.
3. Prepare sprayers (malfunctions) for Learning Activity 5.
4. Prepare a quiz for Learning Activity 9.
5. Locate damaged lawn areas for Evaluation.

SUMMARY OF EVALUATION

Damaged lawn treatment. Students must receive a satisfactory rating on each item of the Student Checklist.

MODULE 06 — Lawn Repair

COMPETENCY STATEMENT 01 — Renovate worn spots in lawns by filling holes and depressions.

EQUIPMENT NEEDED

Wheelbarrow
Topsoil
Spade
Rake
Lawn with holes/depressions

TEXTBOOK — Introductory Horticulture

INSTRUCTOR'S RESPONSIBILITIES

1. Lecture/demonstration for Learning Activity 3.
2. Prepare a quiz for Learning Activity 3.

SUMMARY OF EVALUATION

Filling holes and depressions. The topsoil must match the contour of the area when packed. Students may not use references.

MODULE 06 — Lawn Repair

COMPETENCY STATEMENT 02 — Aerate sod.

EQUIPMENT NEEDED — Aerator
Lawn with compacted soil

TEXTBOOK — None

INSTRUCTOR'S RESPONSIBILITIES

1. Lecture/ demonstration for Learning Activity 1.
2. Prepare quiz for Learning Activity 1.

SUMMARY OF EVALUATION

Aerating a compacted lawn.

MODULE 06 — Lawn Repair

COMPETENCY STATEMENT 03 — Remove and replace damaged turf.

EQUIPMENT NEEDED

Sod cutter
Roller/tamper
Watering Equipment
Sod
Rake
Tiller

TEXTBOOK — None

INSTRUCTOR'S RESPONSIBILITIES

1. Lecture/demonstration for Learning Activity 1.
2. Prepare a quiz for Learning Activity 1.
3. Lecture/demonstration for Learning Activity 3.

SUMMARY OF EVALUATION

Resodding damaged turf. Students may not use references.

MODULE 06 — Lawn Repair

COMPETENCY STATEMENT 04 — Repair sod by sprigging and plugging.

EQUIPMENT NEEDED

Stolons
Plugs
Roller
Watering Equipment
Plug cutter
Flats (3'x3' and 3'x6')
Topsoil
Fertilizer

TEXTBOOK — Introductory Horticulture

INSTRUCTOR'S RESPONSIBILITIES

1. Lecture/demonstration for Learning Activity 1.
2. Prepare quiz for Learning Activity 1.
3. Lecture/demonstration for Learning Activity 4.
4. Prepare quiz for Learning Activity 4.

SUMMARY OF EVALUATION

Sprigging or plugging for reestablishment of damaged turf. Student must rate satisfactory on each item of the Student Checklist.

MODULE 07 — Planting Trees and Shrubs

COMPETENCY STATEMENT 01 — Plant trees and shrubs.

EQUIPMENT NEEDED

Bare root plant
Balled and burlapped plant
Container grown plant
Shovel
Tree stakes
Tree wrap
Watering equipment
Sledge hammer
Wire (#9)
Wrapping
Small sections of garden hose
or leather rope

TEXTBOOK — Introductory Horticulture

INSTRUCTOR'S RESPONSIBILITIES

1. Prepare a quiz for Learning Activity 2.
2. Prepare a quiz for Learning Activity 5.
3. Lecture/demonstration for Learning Activity 6.
4. Prepare a quiz for Learning Activity 6.
5. Lecture/demonstration for Learning Activity 8.
6. Prepare a quiz for Learning Activity 8.
7. Lecture/demonstration for Learning Activity 10.
8. Prepare a quiz for Learning Activity 10.

SUMMARY OF EVALUATION

Planting a tree and/or shrub. Students may not use references.

MODULE 07 — Planting Trees and Shrubs

COMPETENCY STATEMENT 02 — Form ball and burlap shrubs and trees

EQUIPMENT NEEDED

Trees (planted)
Shrubs (planted)
Burlap
Nails
Grass string
Shovel

TEXTBOOK — Introductory Horticulture

INSTRUCTOR'S RESPONSIBILITIES

1. Lecture/demonstration for Learning Activity 2.
2. Prepare a quiz for Learning Activity 2.

SUMMARY OF EVALUATION

Balling and burlapping shrubs and/or trees. There must be no exposed roots or spillage of soil. Students may not use references.

MODULE 07 — Planting Trees and Shrubs

COMPETENCY STATEMENT 03 — Transplant trees and shrubs

EQUIPMENT NEEDED

Trees (planted)
Shrubs (planted)
Shovel
Burlap
Tree Stakes
Tree wrap
#9 wire
Small sections of garden hose or leather rope
Watering equipment
Sledge hammer
Wrapping

TEXTBOOK — Ornamental Horticulture: Harvesting and Planting Trees and Shrubs

INSTRUCTOR'S RESPONSIBILITIES

1. Lecture for Learning Activity 1.
2. Prepare a quiz for Learning Activity 1.

SUMMARY OF EVALUATION

Transplanting a tree or shrub. Students must receive a satisfactory rating on each item of the Student Checklist.

MODULE 07 — Planting Trees and Shrubs

COMPETENCY STATEMENT 04 — Brace newly planted trees

EQUIPMENT NEEDED

Balled and burlapped trees
Bare root trees
Tree Stakes
Leather rope or small sections of garden hose
#10 wire or 7 stran ¼" cable
Sledge hammer
Shovel
Turnbuckles
Stems
Mulch
Lag screws
Wrapping

TEXTBOOK — Introductory Horticulture

INSTRUCTOR'S RESPONSIBILITIES

1. Lecture/demonstration for Learning Activity 2.
2. Prepare a quiz for Learning Activity 2 .
3. Lecture/demonstration for Learning Activity 4.
4. Prepare a quiz for Learning Activity 4.

SUMMARY OF EVALUATION

Bracing a newly planted tree 2" or less in diameter. The stake should not damage bark and the tree must not lean when 10 to 20 pounds of pressure is applied halfway up the trunk. References may not be used.

MODULE 08 Pruning

COMPETENCY STATEMENT 01 Trim and prune trees for balance, decorative and vegetative purposes.

EQUIPMENT NEEDED

Pruning saw
Lopping shears
Hand shears
Antiseptic compound
Ribbon (yellow, red, white)
Black ink or paint
Filmstrip projector

TEXTBOOK

Introductory Horticulture
Filmstrip: "The Elements fo Pruning", Vocational Education Productions.
Ornamental Horticulture: Pruning
PRUNING AND TRAINING FRUIT TREES, Misc. Pub. 480 WVU

INSTRUCTOR'S RESPONSIBILITIES

1. Lecture/demonstration for Learning Activity 2.
2. Prepare a quiz for Learning Activity 7.

SUMMARY OF EVALUATION

Pruning a tree. Cuts should be clean and flush to the leader with no splits evident. References may not be used.

MODULE 08 — Pruning

COMPETENCY STATEMENT 02 — Prune shrubs for balance, decorative and vegetative purposes.

EQUIPMENT NEEDED

Pruning saw
Lopping shears
Hand shears
Antiseptic compound
Shrubs
Ribbon (yellow, red, blue, green)
Black ink or paint
Filmstrip projector

TEXTBOOK

Introductory Horticulture
Ornamental Horticulture: Pruning
Filmstrip: "The Elements of Pruning", Vocational Education Productions

INSTRUCTOR'S RESPONSIBILITIES

1. Lecture/demonstration for Learning Activity 2.
2. Prepare a quiz for Learning Activity 5.
3. Lecture/demonstration for Learning Activity 6.

SUMMARY OF EVALUATION

Pruning a shrub.

MODULE 08 Pruning

COMPETENCY STATEMENT 03 Prune hedge for balance, decorative and vegetative purposes.

EQUIPMENT NEEDED
Pruning saw
Lopping shears
Hand shears
Electric hedge shears
Hand hedge shears
Row of Hedge
Filmstrip projector

TEXTBOOK
Filmstrip: "The Elements of Pruning", Vocational Education Productions.
Introductory Horticulture

INSTRUCTOR'S RESPONSIBILITIES

1. Lecture/demonstration for Learning Activity 2.
2. Lecture/demonstration for Learning Activity 4.

SUMMARY OF EVALUATION

Pruning a hedge. References may not be used.

MODULE 08 — Pruning

COMPETENCY STATEMENT 04 — Train shrubs and hedges for special purposes including espalier effect, topiary effect and bonsai effect.

EQUIPMENT NEEDED

Lumber
Wire
Pruners
Shrubs

TEXTBOOK — Introductory Horticulture

INSTHUCTOR'S RESPONSIBILITIES

1. Lecture for Learning Activity 1.
2. Prepare a quiz for Learning Activity 1.
3. Lecture for Learning Activity 4.
4. Prepare a quiz for Learning Activity 4.

SUMMARY OF EVALUATION

Pruning and constructing form for special effect. Students may not use references.

MODULE 09 — Tree and Shrub Care

COMPETENCY STATEMENT 01 — Treat tree wounds

EQUIPMENT NEEDED — Pruning knife
Tree paint
Tree

TEXTBOOK — None

INSTRUCTOR'S RESPONSIBILITIES

1. Lecture for Learning Activity 2.
2. Prepare a quiz for Learning Activity 2.

SUMMARY OF EVALUATION

Treating a freshly pruned tree.

MODULE 02 — Tree and Shrub Care

COMPETENCY STATEMENT 02 — Inject preservatives and fillers.

EQUIPMENT NEEDED

Knife
Insecticides
Tree paint
Filling materials, i.e. concrete bricks
Disinfectant
Rubber mallet
Chisel
Gouges

TEXTBOOK — None

INSTRUCTOR'S RESPONSIBILITIES

1. Lecture for Learning Activity 2.
2. Prepare a quiz for Learning Activity 2.
3. Lecture for Learning Activity 4.

SUMMARY OF EVALUATION

Written report on procedures needed to treat cavity and implementation of procedures.

MODULE 09 — Tree and Shrub Care

COMPETENCY STATEMENT 03 — Select and apply fertilizer to trees and shrubs.

EQUIPMENT NEEDED

Soil auger, wrenching bar, digging iron, or post hole digger
Fertilizer
Established trees
Filmstrip Projector

TEXTBOOK

Introductory Horticulture
Filmstrip: "Fertilizing Ornamental Plants", Vocational Education Productions

INSTRUCTOR'S RESPONSIBILITIES

1. Prepare questions for Learning Activity 1.
2. Prepare a quiz for Learning Activity 3.
3. Lecture/demonstration for Learning Activity 4.

SUMMARY OF EVALUATION

Fertilizing established tree. Students may not use references.

MODULE 09 — Tree and Shrub Care

COMPETENCY STATEMENT 04 — Applying insecticides and other chemicals by power sprayer to trees and shrubs.

EQUIPMENT NEEDED

Filmstrip projector
Power sprayer
Insecticides

TEXTBOOK

Filmstrip: "Controlling Pests of Ornamental Plants", Vocational Education Productions.
Filmstrip: "Applying Pesticides: Recognizing Pests and Pesticides", AAVIM.
Filmstrip: "Applying Pesticides: Type and Size of Sprayer to Use", AAVIM.
Working in Plant Science

INSTRUCTOR'S RESPONSIBILITIES

1. Prepare questions for Learning Activity 1.
2. Prepare a quiz for Learning Activity 2.
3. Arrange lecture by County Extension Agent for Learning Activity 4.
4. Prepare a quiz for Learning Activity 4.

SUMMARY OF EVALUATION

Treating infested tree with pesticide.

MODULE 09 — Tree and Shrub Care

COMPETENCY STATEMENT 05 — Prepare and protect trees and shrubs from weather

EQUIPMENT NEEDED

Tree wrap
Yard stick
Cloth
Lumber
Plants: trees, shrubs, garden plants.

TEXTBOOK — None

INSTRUCTOR'S RESPONSIBILITIES

1. Lecture/demonstration for Learning Activity 1.
2. Lecture/demonstration for Learning Activity 2.
3. Lecture/demonstration for Learning Activity 3.

SUMMARY OF EVALUATION

Preparing plants for cold weather and harsh sunlight. Students must receive a satisfactory rating on each item of the Student Checklist.

MODULE 10 — Planting and Care of Flowers

COMPETENCY STATEMENT 01 — Plant and transplant annual and perennial flowers.

EQUIPMENT NEEDED

Annual seeds
Flower plants in containers
Seedbed
Watering equipment
Trowel
Filmstrip projector

TEXTBOOK — Introductory Horticulture

INSTRUCTOR'S RESPONSIBILITIES

1. Prepare a quiz for Learning Activity 2.
2. Prepare a quiz for Learning Activity 5.
3. Arrange a lecture by landscape architect for Learning Activity 6.

SUMMARY OF EVALUATION

Planting flowers without damage or wilting.

MODULE 10 — Planting and Care of Flowers

COMPETENCY STATEMENT 02 — Select and apply fertilizer to annual and perennial flowers.

EQUIPMENT NEEDED — Fertilizer
Flowers

TEXTBOOK — Introductory Horticulture

INSTRUCTOR'S RESPONSIBILITIES

None

SUMMARY OF EVALUATION

Mixing and applying fertilizer to flowers, using references if necessary.

MODULE 11 — Flower Care

COMPETENCY STATEMENT 01 — Control weeds in flower beds by cultivating and hand weeding.

EQUIPMENT NEEDED

Hoe
Rake
Flower bed with weeds

TEXTBOOK — None

INSTRUCTOR'S RESPONSIBILITIES

None

SUMMARY OF EVALUATION

Weeding a flower bed without bruising or uprooting flowers. Topsoil must be smooth.

MODULE 11 — Flower Care

COMPETENCY STATEMENT 02 — Apply insecticides and other chemicals by hand sprayer and duster to annual and perennial flowers

EQUIPMENT NEEDED
Hand sprayer
Duster
Insecticide
Filmstrip projector

TEXTBOOK
Filmstrip: "Applying Pesticides: Recognizing Pests and Pesticides", AAVIM.
Filmstrip: "Apply Pesticides: Operating Sprayers:, AAVIM

INSTRUCTOR'S RESPONSIBILITIES

1. Prepare a quiz for Learning Activity 1.
2. Lecture/demonstration for Learning Activity 3.
3. Lecture/demonstration for Learning Activity 4.
4. Arrange for lecture by County Extension Agent for Learning Activity 5.
5. Prepare a quiz for Learning Activity 5.

SUMMARY OF EVALUATION

Treating infested flower bed with insecticide. References may be used.

MODULE 12 — Tool Maintenance

COMPETENCY STATEMENT 01 — Maintain hand tools used in gardening and landscaping.

EQUIPMENT NEEDED

Variety of hand tools including hoe and shovel
Vise
File
Solvent

TEXTBOOK — None

INSTRUCTOR'S RESPONSIBILITIES

1. Lecture/demonstration for Learning Activity 3.
2. Prepare a quiz for Learning Activity 3.

SUMMARY OF EVALUATION

Cleaning and sharpening hoe and shovel.

MODULE 12 — Tool Maintenance

COMPETENCY STATEMENT 02 — Perform operators' services and maintenance on tractor and rotary tiller.

EQUIPMENT NEEDED
Tractor
Rotary Tiller
Maintenance tools

TEXTBOOK — Grounds Keeping Equipment

INSTRUCTOR'S RESPONSIBILITIES

1. Prepare a quiz for Learning Activity 1.
2. Lecture for Learning Activity 2.
3. Prepare a quiz for Learning Activity 2.
4. Lecture for Learning Activity 4.
5. Prepare a quiz for Learning Activity 6.
6. Prepare three problems for Learning Activity 7.
7. Prepare a tractor and/or tiller for Evaluation.

SUMMARY OF EVALUATION

Finding and correcting two malfunctions in tractor and/or tiller.

MODULE 12 — Tool Maintenance

COMPETENCY STATEMENT 03 — Clean and adjust hand and power sprayers, dusters, and seeders

EQUIPMENT NEEDED

Hand sprayer
Power sprayer
Duster
Seeder
Safety clothing
Safety equipment
Water hose
Oil

TEXTBOOK — Applying Pesticides: Management Application Safety

INSTRUCTOR'S RESPONSIBILITIES

1. Lecture/demonstration for Learning Activity 2.
2. Prepare a quiz for Learning Activity 2.
3. Lecture/demonstration for Learning Activity 3.

SUMMARY OF EVALUATION

Cleaning and storing equipment. Students must receive satisfactory rating on each item of the Student Checklist. References may be used.

MODULE 12 — Tool Maintenance

COMPETENCY STATEMENT 04 — Set up, operate, and shut down portable watering and/or irrigation system, including extension of system.

EQUIPMENT NEEDED — Moisture testing device. Portable irrigation/sprinkling system

TEXTBOOK — Working in Plant Science
Working in Plant Science Activity Guide

INSTRUCTOR'S RESPONSIBILITIES

1. Lecture/demonstration for Learning Activity 3.
2. Prepare a quiz for Learning Activity 3.

SUMMARY OF EVALUATION

Using a portable irrigation system, students must maintain sufficient moisture in a given area for one month. Students must receive a satisfactory rating on each item of the Student Checklist.

GRADE CARDS

STUDENT GRADE CARD

HORTICULTURE

GARDENER/LANDSCAPE WORKER

		1st Nine Weeks			2nd Nine Weeks			3rd Nine Weeks			4th Nine Weeks		
MODULE 01	Occupational Knowledge												
COMPETENCY STATEMENT 01	Describe duties common to gardeners and landscape workers. REMARKS:												
COMPETENCY STATEMENT 02	Describe working conditions of gardeners and landscape workers. REMARKS:												
COMPETENCY STATEMENT 03	Describe educational and technical requirements for landscape workers and gardeners. REMARKS:												
COMPETENCY STATEMENT 04	Describe the economic outlook for gardeners and landscape workers for the next ten years. REMARKS:												
MODULE 02	Preparing Lawn Seedbed												
COMPETENCY STATEMENT 01	Take soil samples and interpret soil test analysis. REMARKS:												
COMPETENCY STATEMENT 02	Prepare a seedbed for lawn areas using tiller and tractor. REMARKS:												
COMPETENCY STATEMENT 03	Prepare and apply compost. REMARKS:												
MODULE 03	Sowing Grass Seed												
COMPETENCY STATEMENT 01	Select and mix grass seed for establishing a lawn. REMARKS:												
COMPETENCY STATEMENT 02	Sow grass seed with hand seeder. REMARKS:												
COMPETENCY STATEMENT 03	Sow grass seed with gravity and/or cyclone seeders. REMARKS:												
COMPETENCY STATEMENT 04	Finish seedbed after seeding, including raking, rolling, watering and mulching. REMARKS:												

		1st Nine Weeks			2nd Nine Weeks			3rd Nine Weeks			4th Nine Weeks		
MODULE 04	Lawn Care												
COMPETENCY STATEMENT 01	Care for lawn until first cutting, including watering and application of fertilizer. REMARKS:												
COMPETENCY STATEMENT 02	Mow grass with reel type mower and rotary mower. REMARKS:												
COMPETENCY STATEMENT 03	Select and apply fertilizer to established lawn areas. REMARKS:												
MODULE 05	Disease and Insects: Lawns.												
COMPETENCY STATEMENT 01	Identify diseased grass. REMARKS:												
COMPETENCY STATEMENT 02	Identify grass damaged by insects and other animal pests. REMARKS:												
COMPETENCY STATEMENT 03	Mix insecticide, herbicide, and fungicide. REMARKS:												
COMPETENCY STATEMENT 04	Control disease, weeds, and insect damage on established lawns by applying insecticides, herbicides, and fungicides. REMARKS:												
MODULE 06	Lawn Repair												
COMPETENCY STATEMENT 01	Renovate worn spots in lawns by filling holes and depressions. REMARKS:												
COMPETENCY STATEMENT 02	Aerate sod. REMARKS:												
COMPETENCY STATEMENT 03	Remove and replace damaged turf. REMARKS:												
COMPETENCY STATEMENT 04	Repair sod by sprigging and plugging. REMARKS:												
MODULE 07	Planting Trees and Shrubs												
COMPETENCY STATEMENT 01	Plant trees and shrubs. REMARKS:												

		1st Nine Weeks			2nd Nine Weeks			3rd Nine Weeks			4th Nine Weeks		
MODULE 07	Planting Trees and Shrubs												
COMPETENCY STATEMENT 02	Form ball and burlap shrubs and trees REMARKS:												
COMPETENCY STATEMENT 03	Transplant trees and shrubs REMARKS:												
COMPETENCY STATEMENT 04	Brace newly planted trees REMARKS:												
MODULE 08	Pruning												
COMPETENCY STATEMENT 01	Trim and prune trees for balance, decorative and vegetative purposes REMARKS:												
COMPETENCY STATEMENT 02	Prune shrubs for balance, decorative and vegetative purposes REMARKS:												
COMPETENCY STATEMENT 03	Prune hedge for balance, decorative and vegetative purposes. REMARKS:												
COMPETENCY STATEMENT 04	Train shrubs and hedges for special purposes including espalier effect, topiary effect and bonsai effect. REMARKS:												
MODULE 09	Tree and Shrub Care												
COMPETENCY STATEMENT 01	Treat tree wounds REMARKS:												
COMPETENCY STATEMENT 02	Inject preservatives and fillers. REMARKS:												
COMPETENCY STATEMENT 03	Select and apply fertilizer to trees and shrubs. REMARKS:												
COMPETENCY STATEMENT 04	Applying insecticides and other chemicals by power sprayer to trees and shrubs REMARKS:												
COMPETENCY STATEMENT 05	Prepare and protect trees and shrubs from weather. REMARKS:												
MODULE 10	Planting and Care of Flowers												
COMPETENCY STATEMENT 01	Plant and transplant annual and perennial flowers REMARKS:												

		1st Nine Weeks			2nd Nine Weeks			3rd Nine Weeks			4th Nine Weeks			
MODULE 10	Planting and Care of Flowers													
COMPETENCY STATEMENT 02	Select and apply fertilizer to annual and perennial flowers. REMARKS;													
MODULE 11	Flower Care													
COMPETENCY STATEMENT 01	Control weeds in flower beds by cultivating and hand weeding. REMARKS:													
COMPETENCY STATEMENT 02	Apply insecticides and other chemicals by hand sprayer and duster to annual and perennial flowers. REMARKS:													
MODULE 12	Tool Maintenance													
COMPETENCY STATEMENT 01	Maintain hand tools used in gardening and landscaping. REMARKS:													
COMPETENCY STATEMENT 02	Perform operators' services and maintenance on tractor and rotary tiller. REMARKS:													
COMPETENCY STATEMENT 03	Clean and adjust hand and power sprayers, dusters, and seeders. REMARKS:													
COMPETENCY STATEMENT 04	Set up, operate, and shut down portable watering and/or irrigation system, including extension of system. REMARKS:													